



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,073	10/21/2003	Tokihiro Shimura	4230-101	6700

23448 7590 06/23/2005

INTELLECTUAL PROPERTY / TECHNOLOGY LAW
PO BOX 14329
RESEARCH TRIANGLE PARK, NC 27709

EXAMINER

MARCHESCHI, MICHAEL A

ART UNIT PAPER NUMBER

1755

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/690,073

Applicant(s)

SHIMURA, TOKIHIRO

Examiner

Michael A. Marcheschi

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 12-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 23 and 24 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/12/03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 1755

Applicant's election with traverse of claims 1-11, 23 and 24 (Group I) in the reply filed on 4/12/05 is acknowledged. The traversal is on the ground(s) that the group I claims includes the claimed method and apparatus limitations according to groups II and III. This is not found persuasive because although the Group I claims define the method and apparatus limitations according to the other groups, the process steps are not considered in determining the patentability of the product thus claim 23, although defining the process, does not require the search for the process defined and the only search required is an abrasive search. As clearly defined in the last office action the method and abrasive claims are classified in different areas, which is a basis for restriction. With respect to claim 23, the preamble states an “abrasive **manufactured**” and the limitation “manufactured” makes it a product by process. In addition, the apparatus used in the **process** is not considered in determining the patentability of the product thus claim 23, although defining a process using an apparatus, does not require the search for the apparatus defined and the only search required is an abrasive search. As clearly defined in the last office action the apparatus and abrasive claims are **classified in different areas, which is a basis for restriction.**

As previously defined in the restriction, the separate inventions (1) **have acquired a separate status in the art as shown by their different classification, (2) have acquired a separate status in the art because of their recognized divergent subject matter and (3) the search required for Group I is not required for Group II and III, restriction for examination purposes as indicated is proper.**

Finally, applicants fail to argue the examiners reasons for restriction between the different groups

Art Unit: 1755

The requirement is still deemed proper and is therefore made **FINAL**.

However, although the restriction is made final, applicants are entitled to rejoinder of the process of making claims, only.

Claims 8, 23 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 is indefinite as to the limitation "the tap density" because a "tap density" has not been literally defied before, thus the limitation lacks antecedent basis.

Claims 23 and 24 are indefinite as to the limitation "generally conical shape" because the examiner is unclear as to what "generally" encompasses, thus rendering the scope of the claims unclear. In addition, the limitation "high-pressure" is indefinite because the term "high" in the claim is a relative term which renders the claim indefinite. The term "high" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Finally, the limitation "the angle of vertex" is indefinite because an "angle of vertex" has not been literally defied before, thus the limitation lacks antecedent basis.

Claim 24 is indefinite because it defines "An abrasive manufactured by...device comprising" however, the claim **does not** define any method steps. How can the claim state the limitation "manufactured by" without defining any steps? In view of this, the scope of the claim is unclear.

Art Unit: 1755

Claims 1-3, 8 and 11 are indefinite because no specific composition for the material is set forth. The claims only define an inorganic material (article) having specific properties but fail to define the composition article. "An article characterized by physical properties alone and no specific composition is vague and indefinite. See *Ex parte Slob*, 157 USPQ 172.

Claim 11 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 11 is objected to because the subject matter does not limit the abrasive but only appears to defining the use.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8, 11 and 23-24 are rejected under 35 U.S.C. 103(a) as obvious over Bergkvist in view of Achikita et al..

Art Unit: 1755

Bergkvist teaches in the abstract, a material (powder) comprises stainless steel having a chromium content of 10-30% (claimed amount). The reference does not make any mention of boron or aluminum (titanium can be present in an amount of 0-2%) in the stainless steel, thus it can be presumed that these are not present absent any evidence to the contrary.

Achikita et al. teaches in column 4, lines 34-35 that powders generally have the claimed size.

With respect to the abrasive limitation, applicants are claiming a “material” which the intended use does not carry any weight to the composition (see **In re Thuau 57 USPQ 324 (CCPA 1942)**). Any material possesses a property such that it may be used for a purpose. In addition, irrespective of what the material is called, the composition and is the same, thus no distinction is seen to exist. The primary reference teaches a stainless steel powder having the claimed amount of chromium (powder used according to instant claims 6-7) and although all of the claimed characteristics are not literally defined, these characteristics are expected and therefore obvious because the material is the same (stainless steel with the claimed amount of chromium) and the same material is expected to yield the same results (i.e. claimed characteristics) in the absence of any evidence showing the contrary. With respect to the size, the reference defines this as powder and the broad interpretation of a powder encompasses sizes within the claimed range because the claimed sizes are known powder sizes, as shown by the secondary reference. In view of this, the limitations of claims 1-8 are met. With respect to claim 11, this is defining the intended use of the material (further defines the work piece used and not the material (abrasive), as claimed, and the preamble limitation “ejected onto a work piece” is of no consequence when a composition (material) is the same. Ultimate intended utility does not

Art Unit: 1755

make a composition patentable. See *In re Pearson*, 181 U.S.P.Q. 641. With respect to claims 23-24, applicants use process limitation to define the product (claim 24 defines an abrasive manufactured by...) and as is well known "product-by-process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964. Assuming arguendo about claim 24, no patentable distinction is seen with respect to the abrasive irrespective of how it is formed and what apparatus is used to form it. The material claim is not patentably distinguishable by way of the apparatus used, absent evidence.

Claims 1-8, 11 and 23-24 are rejected under 35 U.S.C. 103(a) as obvious over DE 19815087 in view of Tanaka et al.

The DE reference teaches in the abstract, a blasting (abrasive) grit (medium) comprises stainless steel having a chromium content of 10-30% (claimed amount). The reference does not make any mention of boron, aluminum or titanium in the stainless steel, thus it can be presumed that these are not present absent any evidence to the contrary.

Tanaka et al. teaches in the abstract column 4, lines 34-35 that blasting medium generally have the claimed size.

The primary reference teaches a stainless steel blasting grit having the claimed amount of chromium (powder used according to instant claims 6-7) and although all of the claimed characteristics are not literally defined, these characteristics are expected and therefore obvious because the material is the same (stainless steel with the claimed amount of chromium) and the same material is expected to yield the same results (i.e. claimed characteristics) in the absence of any evidence showing the contrary. With respect to the size, the reference defines this as

Art Unit: 1755

blasting grit and the broad interpretation of a blasting grit encompasses sizes within the claimed range because the claimed sizes are known blasting grit sizes, as shown by the secondary reference. In view of this, the limitations of claims 1-8 are met. With respect to claim 11, this is defining the intended use of the material (further defines the work piece used and not the material (abrasive), as claimed, and the preamble limitation "ejected onto a work piece" is of no consequence when a composition (material) is the same. Ultimate intended utility does not make a composition patentable. See *In re Pearson*, 181 U.S.P.Q. 641. With respect to claims 23-24, applicants use process limitation to define the product (claim 24 defines an abrasive **manufactured by...**) and as is well known "product-by-process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964. Assuming *arguendo* about claim 24, no patentable distinction is seen with respect to the abrasive irrespective of how it is formed and what apparatus is used to form it. The material claim is not patentably distinguishable by way of the apparatus used, absent evidence.

Claims 1-11 and 23-24 are rejected under 35 U.S.C. 103(a) as obvious over JP 2002-256255 in view of Bergkvist.

The JP reference teaches in the abstract and sections [0012]-[0032], an abrasive (can have the claimed size) comprises stainless steel. The reference does not make any mention of boron, aluminum or titanium in the stainless steel, thus it can be presumed that these are not present absent any evidence to the contrary. The abrasive is surface treated with a material that provides water resistance (claimed material) in an amount of 0.01-5%

Art Unit: 1755

The primary reference teaches a stainless steel abrasive and although all of the claimed characteristics are not literally defined, these characteristics are expected and therefore obvious because the material is the same (stainless steel) and the same material is expected to yield the same results (i.e. claimed characteristics) in the absence of any evidence showing the contrary. With respect to the size, the reference defines a size which encompasses and therefore makes obvious the claimed size. In view of this, the limitations of claims 1-5 and 7-10 are met. With respect to claim 11, this is defining the intended use of the material (further defines the work piece used and not the material (abrasive), as claimed, and the preamble limitation "ejected onto a work piece" is of no consequence when a composition (material) is the same. Ultimate intended utility does not make a composition patentable. See *In re Pearson*, 181 U.S.P.Q. 641. With respect to claim 6, the reference defines stainless steel and the broad interpretation of stainless steel encompasses a material having the claimed chromium content because stainless steels are generally known to have this chromium content, as shown by the secondary reference. With respect to claims 23-24, applicants use process limitation to define the product (claim 24 defines an abrasive **manufactured** by...) and as is well known "product-by-process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964. Assuming *arguendo* about claim 24, no patentable distinction is seen with respect to the abrasive irrespective of how it is formed and what apparatus is used to form it. The material claim is not patentably distinguishable by way of the apparatus used, absent evidence.

Claims 1-11 and 23-24 are rejected under 35 U.S.C. 103(a) as obvious over JP 2001-009727 in view of Magnusson et al. and Bergkvist.

Art Unit: 1755

The JP reference teaches in the abstract and sections [0010]-[0034], an abrasive (can have the claimed size) that comprises a material having a Mohs hardness defined by sections [0026]-[0027]. The abrasive is surface treated with a material that provides water resistance (claimed material) in an amount of 0.01-5%

Magnusson et al. teaches in column 9, lines 53-54 that stainless steel has a Mohs hardness of 5.7

The primary reference teaches an abrasive that has a Mohs hardness depending on the hardness of the substrate, wherein the Mohs hardness satisfies the relationship defined in sections [0026]-[0027]. The hardness of the substrate is defined as 5 or more. Assuming that the hardness (E2) of the substrate is 6.5 (within the range defined), the calculated hardness of the abrasive (E1) will be $E2 - 3.5 \leq E1 \leq E2 - 0.5$ or between 3 and 6 and since stainless steel has a hardness of 5.7, as shown by Magnusson et al., the use as the abrasive according to the primary reference is obvious in view of the hardness value for the abrasive as disclosed by the primary reference. With this being obvious, although all of the claimed characteristics are not literally defined, these characteristics are expected and therefore obvious because the material is the same (stainless steel) and the same material is expected to yield the same results (i.e. claimed characteristics) in the absence of any evidence showing the contrary. With respect to the size, the reference defines a size which encompasses and therefore makes obvious the claimed size. In view of this, the limitations of claims 1-5 and 7-10 are met. With respect to claim 11, this is defining the intended use of the material (further defines the work piece used and not the material (abrasive), as claimed, and the preamble limitation "ejected onto a work piece" is of no consequence when a composition (material) is the same. Ultimate intended utility does not make

Art Unit: 1755

a composition patentable. See *In re Pearson*, 181 U.S.P.Q. 641. With respect to claim 6, the combined references defines stainless steel and the broad interpretation of stainless steel encompasses a material having the claimed chromium content because stainless steels are generally known to have this chromium content, as shown by Bergkvist. With respect to claims 23-24, applicants use process limitation to define the product (claim 24 defines an abrasive **manufactured by...**) and as is well known "product-by-process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964. Assuming arguendo about claim 24, no patentable distinction is seen with respect to the abrasive irrespective of how it is formed and what apparatus is used to form it. The material claim is not patentably distinguishable by way of the apparatus used, absent evidence.

Claims 1-8, 11 and 23-24 are rejected under 35 U.S.C. 103(a) as obvious over either (1) JP 2002-114968 or (2) JP 2001-122644 **both** in view of Bergkvist.

JP 2002 114968 teaches in the abstract and sections [0010]-[0028], an abrasive (can have the claimed size) comprises stainless steel. The reference does not make any mention of boron, aluminum or titanium in the stainless steel, thus it can be presumed that these are not present absent any evidence to the contrary.

JP 2001-122644 teaches in the abstract and sections [0003]-[0015], an abrasive (can have the claimed size) comprises stainless steel. The reference does not make any mention of boron, aluminum or titanium in the stainless steel, thus it can be presumed that these are not present absent any evidence to the contrary.

Art Unit: 1755

The primary references teach stainless steel abrasives and although all of the claimed characteristics are not literally defined; these characteristics are expected and therefore obvious because the material is the same (stainless steel) and the same material is expected to yield the same results (i.e. claimed characteristics) in the absence of any evidence showing the contrary. With respect to the size, the reference defines a size which encompasses and therefore makes obvious the claimed size. In view of this, the limitations of claims 1-5 and 7-8 are met. With respect to claim 11, this is defining the intended use of the material (further defines the work piece used and not the material (abrasive), as claimed, and the preamble limitation "ejected onto a work piece" is of no consequence when a composition (material) is the same. Ultimate intended utility does not make a composition patentable. See *In re Pearson*, 181 U.S.P.Q. 641. With respect to claim 6, the reference defines stainless steel and the broad interpretation of stainless steel encompasses a material having the claimed chromium content because stainless steels are generally known to have this chromium content, as shown by the secondary reference. With respect to claims 23-24, applicants use process limitation to define the product (claim 24 defines an abrasive **manufactured by...**) and as is well known "product-by-process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964. Assuming arguendo about claim 24, no patentable distinction is seen with respect to the abrasive irrespective of how it is formed and what apparatus is used to form it. The material claim is not patentably distinguishable by way of the apparatus used, absent evidence.

Claims 9-10 are rejected under 35 U.S.C. 103(a) as obvious over DE 19815087 in view of Tanaka et al., as applied to claim 1 above and further in view of either (1) JP 2002-256255, (2) JP 2001-009727 or (3) Kydd.

JP 2002-256255 teaches in sections [0013]-[0015] that surface treating an abrasive (stainless steel) improves the performance of the abrasive.

JP 2001-009727 teaches in sections [0032]-[0033] that surface treating an abrasive improves the performance of the abrasive.

Kydd teaches in column 8, line 66-column 9, line 6 that it is well known to surface treat metal particles with stearic acid (claimed substance, as defined by instant specification) in order to prevent agglomeration (reason for using this material according to the instant specification on page 11, line 12).

It is the examiners position that it would have been obvious to surface treat the stainless steel particles according to DE 19815087 in view of Tanaka et al. in order to optimize the performance of the abrasive by providing fluidity and preventing agglomeration, as shown by any one of (1) JP 2002-256255, (2) JP 2001-009727 or (3) Kydd. The agglomeration of blasting media is unwanted in order to eliminate the possibility of any larger particles being introduced during the blasting process which will result in producing much less than optimal results (i.e. surface scratching due to the larger particles). In view of this, any known way to prevent agglomeration and optimize the abrasive performance is clearly obvious to the skilled artisan.

Art Unit: 1755

Claims 9-10 are rejected under 35 U.S.C. 103(a) as obvious over either (1) JP 2002-114968 or (2) JP 2001-122644 **both** in view of Bergkvist, as applied to claim 1 above and further in view of either (1) JP 2002-256255, (2) JP 2001-009727 or (3) Kydd.

It is the examiners position that it would have been obvious to surface treat the stainless steel particles according to either (1) JP 2002-114968 or (2) JP 2001-122644 **both** in view of Bergkvist in order to optimize the performance of the abrasive by providing fluidity and preventing agglomeration, as shown by any one of (1) JP 2002-256255, (2) JP 2001-009727 or (3) Kydd. The agglomeration of blasting media is unwanted in order to eliminate the possibility of any larger particles being introduced during the blasting process which will result in producing much less than optimal results (i.e. surface scratching due to the larger particles). In view of this, any known way to prevent agglomeration and optimize the abrasive performance is clearly obvious to the skilled artisan.

In view of the teachings as set forth above, it is the examiners position that the references reasonably teach or suggest the limitations of the rejected claims. In all of the above rejections, if applicants argue the characteristic, they are required to provide evidence to support this.

A reference is good not only for what it teaches but also for what one of ordinary skill might reasonably infer from the teachings. *In re Opprecht* 12 USPQ 2d 1235, 1236 (CAFC 1989); *In re Bode* USPQ 12; *In re Lamberti* 192 USPQ 278; *In re Bozek* 163 USPQ 545, 549 (CCPA 1969); *In re Van Mater* 144 USPQ 421; *In re Jacoby* 135 USPQ 317; *In re*

Art Unit: 1755

LeGrice 133 USPQ 365; *In re Preda* 159 USPQ 342 (CCPA 1968). In addition, "A reference can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments" See *In re Van Marter*, 144 USPQ 421.

A generic disclosure renders a claimed species *prima facie* obvious. *Ex parte George* 21 USPQ 2d 1057, 1060 (BPAI 1991); *In re Woodruff* 16 USPQ 2d 1934; *Merk & Co. v. Biocraft Lab. Inc.* 10 USPQ 2d 1843 (Fed. Cir. 1983); *In re Susi* 169 USPQ 423 (CCPA 1971).

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549; *In re Wertheim* 191 USPQ 90 (CCPA 1976).

Applicants use process limitations to define the product and "product-by-process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964.

Evidence of unexpected results must be clear and convincing. *In re Lohr* 137 USPQ 548. Evidence of unexpected results must be commensurate in scope with the subject matter claimed. *In re Linder* 173 USPQ 356. To establish unexpected results over a claimed range, applicants should compare a sufficient number of tests both inside and outside (i.e. as well as the upper and lower limits) the claimed range to show the criticality of the claimed range. *In re Hill* 284 F.2d 955, 128 USPQ 197 (CCPA 1960).

Art Unit: 1755

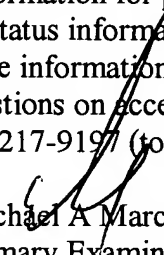
Any foreign language documents submitted by applicant has been considered to the extent of the short explanation of significance, English abstract or English equivalent, if appropriate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

6/05
MM


Michael A Marcheschi
Primary Examiner
Art Unit 1755